

Appendix "A"

I.

```

table song_vectors (      song_id double NOT NULL PRIMARY
KEY, v1 float,           # tempo (continuous)      v2 float,
                        # lead vocal type (integer) (0-8) v3 float,      #
focus on background vocals? (bool) (0-1)

                        #***** boolean instrument filters below *****
v4 float,               # prominent acoustic guitar (bool) (0-1)
v5 float,               # prominent electric guitar (bool) (0-1)
v6 float,               # prominent bass (bool) (0-1)
v7 float,               # prominent drums (bool) (0-1)
v8 float,               # prominent harmonica (bool) (0-1)
v9 float,               # prominent organ (bool) (0-1)
v10 float,              # prominent piano (bool) (0-1)
v11 float,              # prominent synthesizer (bool) (0-
1)
v12 float,              # prominent horn (bool) (0-1)
v13 float,              # prominent saxophone (bool) (0-1)
v14 float,              # prominent strings (bool) (0-1)

                        #***** continuous genre mixer filters below
*****

                        #           these are subject to change      v15
float,                  # Alternative (continuous)      v16 float,
                        # Blues (continuous)
v17 float,              # Country (continuous)

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v18 float, # Electronic/Dance (continuous)
v19 float, # Folk (continuous)
v20 float, # Gospel (continuous)
v21 float, # Jazz (continuous)
v22 float, # Latin (continuous)
v23 float, # New Age (continuous)
v24 float, # R&B/Soul (continuous)
v25 float, # Rap/Hip-Hip (continuous)
v26 float, # Reggae (continuous)
v27 float, # Rock (continuous)

***** continuous Vocal Parameters *****

subject to change v28 float,

Smooth Voice (continuous)

v29 float, # Soulful Voice (continuous)
v30 float, # Sexy Voice (continuous)
v31 float, # Great Voice (continuous)
v32 float, # Powerful Voice (continuous)

***** continuous Emotion Parameters

v33 float, # Intense
v34 float, # Upbeat
v35 float, # Aggressive
v36 float, # Relaxing
v37 float, # Mellow
v38 float, # Sad
v39 float, # Romantic

```

v40 float,          # Broken-hearted
***** continuous coordinate parameters
v41 float,          # coordinate 1
v42 float,          # coordinate 2
v43 float,          # coordinate 3
v44 float,          # coordinate 4
v45 float,          # coordinate 5
v46 float,          # coordinate 6
v47 float,          # coordinate 7
v48 float,          # coordinate 8
v49 float,          # coordinate 9
v50 float           # coordinate 10
                ***** cluster related stuff
v51 int,            # uid of parent song
v52 int,            # level of song (if it's a std candle
song)
                # will be -1 if it's a normal leaf song
v53 float,          # continuous quantitative filter
measurement
v54 int,            # number of songs in the cluster
                represented by # this song
v55 int             # release year
)

```

II. Filter Definitions

Filter Structure:

```

<filter>
  <uid>5</uid>
  <value>.3</value>*
  <direction>3.14159</direction>*
  <rangehi>0</rangehi>*
  <rangehi>6.28318</rangehi>*
  <booleanlist>0 2 4 7 9</booleanlist>*
  <boolean type>0</boolean type>*
  <booleanstring>(1&&5) || (3&&8)&&!(6 || 3)</booleanstring>*
  **
</filter>

```

* these fields are optional depending on the filter
 ** this generalized boolean query mechanism is subject to change

List of Filters/controls with their corresponding fields:

<u>FilterName</u>	<u>uid</u>	<u>value</u>	<u>direction</u>	<u>rangehi</u>	<u>boolean index list</u>
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Genre Mixer Parameters: (uid's 0-99)

Alternative	0	0-1 (continuous)	-	-	-	-
Blues	1	0-1 (continuous)	-	-	-	-
Country	2	0-1 (continuous)	-	-	-	-
Electronic/Dance	3	0-1 (continuous)	-	-	-	-
Folk	4	0-1 (continuous)	-	-	-	-
Gospel	5	0-1 (continuous)	-	-	-	-
Jazz	6	0-1 (continuous)	-	-	-	-
Latin	7	0-1 (continuous)	-	-	-	-
New Age	8	0-1 (continuous)	-	-	-	-
R&B/Soul	9	0-1 (continuous)	-	-	-	-
Rap/Hip-Hop	10	0-1 (continuous)	-	-	-	-
Reggae	11	0-1 (continuous)	-	-	-	-
Rock	12	0-1 (continuous)	-	-	-	-

Vocal Quality (uid's 200-299)

Lead Vocals	200	-	-	-	-	0-8 (int)
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**note: For Lead Vocals) the meaning of the values are the following:

0 = female solo, 1 = male solo, 2 = female duet, 3 = male duet, 4 = mixed duet, 5 = female group, 6 = male group, 7 = mixed group, 8 = instrumental.
 The <boolean type> parameter should be frozen at 1 for 'or.'

Thus a typical XML filter structure for this parameter may be:

```

<filter>
  <uid>15</uid>

```

```

<booleanlist>0 2 4</booleanlist>
<booleantype>1</booleantype>
</filter>

```

which means, provide songs that are either 'female solo vocals,' 'female duet vocals,' or 'mixed duet vocals.'

*** note: an additional field is included in the XML filter structure, <booleanstring> to provide more powerful, arbitrary combinations of boolean values and operators.

Vocal Mixer Parameters (uid's 300-399)

Smooth Voice	300	0-1 (continuous)	-	-	-	-
Soulful Voice	301	0-1 (continuous)	-	-	-	-
Sexy Voice	302	0-1 (continuous)	-	-	-	-
Great Voice	303	0-1 (continuous)	-	-	-	-
Powerful Voice	304	0-1 (continuous)	-	-	-	-
Vocal Circumplex	305	0-1 (continuous)	0-2PI (continuous)	-	-	0-10 int

*the circumplex arranges the previous 5 parameters on a circle.

Instrument Parameters (uid's 400-499)

Acoustic Guitar	400	0-1 (boolean)	-	-	-	-
Electric Guitar	401	0-1 (boolean)	-	-	-	-
Bass	402	0-1 (boolean)	-	-	-	-
Drums	403	0-1 (boolean)	-	-	-	-
Harmonica	404	0-1 (boolean)	-	-	-	-
Organ	405	0-1 (boolean)	-	-	-	-
Piano	406	0-1 (boolean)	-	-	-	-
Synthesizer	407	0-1 (boolean)	-	-	-	-
Horn	408	0-1 (boolean)	-	-	-	-
Saxophone	409	0-1 (boolean)	-	-	-	-
Strings	410	0-1 (boolean)	-	-	-	-

Emotion Mixer Parameters (uid's 500-599)

Intense	500	0-1 (continuous)	-	-	-	-
Upbeat	501	0-1 (continuous)	-	-	-	-
Aggressive	502	0-1 (continuous)	-	-	-	-
Relaxing	503	0-1 (continuous)	-	-	-	-
Mellow	504	0-1 (continuous)	-	-	-	-
Sad	505	0-1 (continuous)	-	-	-	-
Romantic	506	0-1 (continuous)	-	-	-	-
Broken-hearted	507	0-1 (continuous)	-	-	-	-

III. Relevant Tables in the Production Database

```

table songs (
  uid double NOT NULL PRIMARY KEY,
  created datetime,
  song_title varchar(255),
  artist varchar(255),
  genre double,
  album_title varchar(255),
  release_year int,      # this is used for the timeline filter

```

```

parent double # parent song, null if we're the highest in this
genre
)

create table filters (
    uid int NOT NULL PRIMARY KEY,
    name varchar(255),
    column_name varchar(18) NOT NULL, # maps to columns in
song_vectors
    type int # TBD, probably used for whether this is an SQL or other
param
                                # for now, 0=SQL only, 1=attrvector param for
Matlab
)\g

```